

REMARKS***Introduction***

Receipt of the Office Action mailed February 7, 2003 is acknowledged. The present amendment submits a substitute specification that includes standard headings as generally included in U.S. patent specifications. The independent claims 1, 6 and 7 have also been amended to clarify the use of a blowing agent as described in paragraph 10 of the specification. No new matter has been added. Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment captioned **“Version with markings to show changes made.”**

Claims 1-21 remain pending for reconsideration.

Claim Rejections – 35 USC §112

Claims 1-19 stand rejected under 35 U.S.C. 112, first paragraph. This rejection is respectfully traversed for at least the following reasons.

The PTO asserted that the pore formers as disclosed in the present application are equivalent to blowing agents, such as those disclosed by Firgo (US Patent No. 6,007,750). This assertion is not correct. There is an essential difference between pore formers and blowing agents. Pore formers are dense particles that occupy a space based on their shape. In use, pore formers are employed together with dissolved cellulosic material, and are subjected to a coagulating bath and a washing bath, thereby regenerating and/or precipitating the cellulosic material, dissolving the pore formers and washing them out, leaving behind pores in the finished sponge cloth having the same size and shape as the pore forming particles. The cloth is formed during regeneration and/or precipitation of the cellulosic material.

On the other hand, blowing agents are used to form pores by generating gases to create cavities whereas pore formers generally do not work by generating gases. In use, blowing agents cause cavities which are considerably larger than their own particle size. The formation of gas is normally induced by heating (see Firgo at col. 2, lines 29-38). Preferred blowing agents are azodicarbonamide (producing nitrogen gas upon heating) and sodium hydrogen carbonate (yielding carbon dioxide gas and water vapor upon heating).

Note that while the pore formers of the present invention may include carbonates (such as sodium carbonate); hydrogen carbonates are not specifically disclosed. It is common knowledge that hydrogen carbonates decompose at low temperatures of about 50 to 100°C, whereas carbonates require much higher temperatures. In the present situation, it is how the material is, rather than what it is chemically that makes a material a “blowing agent” or a “pore former.” This distinction is well understood by those of skill in the art. That is, as discussed above, generally pore formers are capable of being washed away by a coagulation and/or a washing bath. Sodium sulfate or magnesium sulfate meets this requirement, without functioning as blowing agents. There is thus no overlap in the definitions of pore formers and blowing agents. In general, any particles made of a sufficiently soluble material can function as a pore former. Similarly, any particle that can create a gas upon heating and create a cavity by virtue of the gas generated, is a blowing agent. As such, it is how a material is used that determines whether it is a blowing agent or a pore former.

The Examiner is respectfully requested to reconsider and withdraw the outstanding rejection based on 112.

Claim Rejections – 35 USC § 102

Claims 1-3 stand rejected under 35 U.S.C. 102(e) as being anticipated by US 6,281,259 B1 to Hausdorf. This rejection is respectfully traversed for at least the following reasons.

Hausdorf teaches a sponge cloth based on a derivatized cellulose, *i.e.* on a cellulose wherein the hydroxyl groups are substituted with acetyl groups, the degree of substitution being in a range of from 0.2 to 1.5. Contrary thereto, the presently claimed sponge cloth is based on cellulose produced by an amine oxide process. There is no possibility of forming non-derivatized cellulose with an amine oxide process as claimed. Indeed, Hausdorf does not teach or suggest an amine oxide process at all, but to the contrary teaches that a cellulose derivative powder is dissolved in a solvent or solvent system based on dimethylsulfoxide (DMSO) or dimethylacetamide (col. 2, lines 36-39). Although N-Methyl-morpholine N-oxide (NMMO) may be employed as a co-solvent (col. 2, line 43, see also claim 5), it should be noted that acetyl groups are still present in the final product of Hausdorf (see claim 1, reciting “A sponge cloth comprising modified cellulose”).

Thus, since Hausdorf fails to teach or suggest a sponge cloth which is based on cellulose as well as one made in an amine oxide process, the instant rejection of claims 1-3 is improper and should be withdrawn.

Claim Rejections – 35 USC § 103

Claims 4 and 5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,281,259 B1 to Hausdorf.

Claim 4 recites plasticizers while claim 5 recites biocidally active agents as ingredients of a sponge cloth. As explained above, the sponge cloth of instant claims 1-3 is novel over Hausdorf, and thus the addition of a plasticizer or a biocidally active agent does not change this fact. The Examiner is respectfully requested to withdraw the instant rejection and reconsider.

Conclusion

Claims 6-21 were not rejected over art and claims 20-21 were not rejected at all. These claims should all be allowable as well.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

Dated: May 28, 2003

Respectfully submitted,

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Version With Markings to Show Changes Made

1. (Amended) A sponge cloth which is based on cellulose and has been provided with an internal reinforcement, capable of being obtained by an amine oxide process without being exposed to conditions where a blowing agent decomposes to form gaseous products and so as to cause a foam. [use of blowing agents.]

6. (Amended) A process for producing a sponge cloth which is based on cellulose and has been provided with an internal reinforcement, which comprises

(a) providing a mixture which includes cellulose dissolved in the N-oxide of a tertiary amine and water and also at least one pore former and fibers, [but not blowing agent,]

(b) spreading the mixture onto a transportation belt,

(c) passing the layer through a coagulation bath comprising a dilute aqueous amine oxide solution to dissolve out the pore former,

(d) washing the remaining amine oxide out,

(e) drying the sponge cloth web and

(f) end-iteming it

(g) wherein said mixture is not exposed to conditions where a blowing agent decomposes to form gaseous products.

7. (Amended) A process for producing a sponge cloth which is based on cellulose and has an internal reinforcement, which comprises

(a) providing a mixture which includes cellulose dissolved in the N-oxide of a tertiary amine and water and also at least one pore former,

- (b) applying the mixture to both sides of a polymeric net,
- (c) passing the layer through a coagulation bath comprising a dilute aqueous amine oxide solution to dissolve out the pore former,
- (d) washing the remaining amine oxide out,
- (e) drying the sponge cloth layer and
- (f) end-iteming it
- (g) wherein said mixture is not exposed to conditions where a blowing agent decomposes to form gaseous products.